

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A photovoltaic (PV) laminate backplane assembly comprising:

an insulative substrate; and

a metal foil having a first surface and a second surface opposite the first surface, the first surface of the metal foil bonded to said insulative substrate and the second surface including an ~~interconnection~~ interconnect pattern in electrical contact with pads located on a same side of each solar cell for electrically interconnecting a plurality of solar cells in a series string, ~~the interconnection pattern comprising an edge connector and a series string, the series string in electrical contact with pads located on a same side of each solar cell~~ such that electrical current from each solar cell in the series string is transported ~~from the pads to the~~ and combined at an edge connector of said metal foil, the series string including a bypass diode for allowing the series string to be bypassed in case of failure of the series string, the second surface of said metal foil also including a light reflector disposed at exposed regions on the second surface, said light reflector configured to reflect light incident thereon to increase a concentration of light on the solar cell.

2. (Original) The assembly of claim 1, wherein said substrate comprises a polymeric substrate.

3. (Original) The assembly of claim 2, wherein said polymeric substrate comprises one of a flexible and a rigid polymer.

4. (Previously Presented) The assembly of claim 1, wherein said exposed regions on said second surface of said metal foil are disposed proximate peripheral edges of said solar cell and are augmented by a coating.

5. (Original) The assembly of claim 4, wherein said coating includes a reflective ink.

6. (Original) The assembly of claim 5, wherein said ink includes a colloidal suspension of glass spheres in an optically transparent binder.

7. (Original) The assembly of claim 1, wherein said metal foil is at least one of copper, aluminum and a conductive metal foil selected on a basis of cost, electrical, and thermal performance.

8. (Previously Presented) The assembly of claim 7, wherein said metal foil is further patterned to match an interconnection configuration of a PV laminate module.

9. (Original) The assembly of claim 8, wherein said metal foil is configured to provide a low resistance interconnection of a plurality of solar cells while providing a thermal sink for heat generated by each cell.

10. (Previously Presented) The assembly of claim 9, wherein said metal foil is configured for channeling heat generated by at least one of said solar cells to an edge of said module.

11. (Previously Presented) The assembly of claim 10, wherein said edge of said module is configured to dissipate said generated heat by one of radiation and convection.

12. (Original) The assembly of claim 1, wherein said metal foil functions as an electrical conductor, thermal conductor, and an optical reflector.

13. (Previously Presented) The assembly of claim 1, wherein said substrate includes a flexible polymer and said metal foil includes a reflective coating disposed proximate at least one edge of said solar cell.

14. (Original) The assembly of claim 1, wherein said substrate includes a plurality of metallized vias to allow dissipation of heat therethrough.

15. (Currently Amended) A solar cell laminate assembly comprising:

a plurality of solar cells each having a first side and a second side, each of said plurality of solar cells configured to produce an electrical current when receiving photons on at least said first side;

an encapsulant operably coupled to the first side of each of said plurality of solar cells;

an insulative substrate operably coupled to the second side of each of said plurality of solar cells; and

a metal foil having a first surface and a second surface opposite the first surface, the first surface bonded to said insulative substrate and the second surface including an ~~interconnection-interconnect~~ interconnect pattern in electrical contact with pads located on a same side of each solar cell for electrical interconnecting a plurality of solar cells in ~~a series string, the interconnection pattern comprising an edge connector and a series string, the series string in electrical contact with pads located on the second side of each solar cell~~ such that electrical current from each solar cell in the series string is transported ~~from the pads to the and combined at an edge connector of said metal foil, the series string including a bypass diode for allowing the series string to be bypassed in case of failure of the series string,~~ the second surface of said metal foil also including a light reflector disposed at exposed regions on the second surface, said light reflector configured to reflect light incident thereon to increase a concentration of light on the solar cell.

16. (Original) The assembly of claim 15, wherein said substrate comprises a polymeric substrate.

17. (Original) The assembly of claim 16, wherein said polymeric substrate comprises one of a flexible and a rigid polymer.

18. (Previously Presented) The assembly of claim 15, wherein said exposed regions on said second surface of said metal foil are disposed proximate peripheral edges of said each solar cell and are augmented by a coating.

19. (Original) The assembly of claim 18, wherein said coating includes a reflective ink.

20. (Original) The assembly of claim 19, wherein said ink includes a colloidal suspension of glass spheres in an optically transparent binder.

21. (Original) The assembly of claim 15, wherein said metal foil is at least one of copper, aluminum and a conductive metal foil selected on a basis of cost, electrical, and thermal performance.

22. (Previously Presented) The assembly of claim 21, wherein said metal foil is further patterned to match an interconnection configuration of a PV laminate module.

23. (Original) The assembly of claim 22, wherein said metal foil is configured to provide a low resistance interconnection of said plurality of solar cells while providing a thermal sink for heat generated by said each solar cell.

24. (Previously Presented) The assembly of claim 23, wherein said metal foil is configured for channeling heat generated by at least one of said solar cells to an edge of said module.

25. (Previously Presented) The assembly of claim 24, wherein said edge of said module is configured to dissipate said generated heat by one of radiation and convection.

26. (Original) The assembly of claim 15, wherein said metal foil functions as an electrical conductor, thermal conductor, and an optical reflector.

27. (Original) The assembly of claim 15, wherein said substrate includes a flexible polymer and said light concentrator includes a reflective coating disposed proximate said edges of said each solar cell.

28. (Original) The assembly of claim 15, wherein said substrate includes a plurality of metallized vias to allow dissipation of heat therethrough.